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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/558,273

11/23/2005

Takeshi Izumi

2005-1856A

1648

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7590

03/24/2009

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EXAMINER

SAVAGE, MATTHEW O

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/558,273	Applicant(s) IZUMI ET AL.	
	Examiner Matthew O. Savage	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

This action is supplemental to the non-final action mailed on 3-20-09..

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,633,624 to Ito et al in view of pages 1225-1239 of "Boiler Operating Engineering Questions and Answers by P. Chattopadhyay, published on 12-28-2000.

With respect to claim 1, Ito discloses a condensate demineralizer for demineralizing condensate in a nuclear power plant (see lines 37-40 of col. 2), comprising a mixed bed of a strongly acidic gel-type cation exchange resin (see lines 47-52 of col. 2 and lines 24-29 of col. 4) and a strongly basic porous anion exchange resin (see lines 22-48 of col. 5), the anion exchange resin having a particle size of 500-1000 micron (see line 31 of col. 5). Ito et al fail to specify the anion exchange resin as having a uniform particle size distribution. Chattopadhyay discloses that ion exchange resins having a uniform particle size, for example, Dowex 550A, have superior performance characteristics for demineralizing condensate than resins having a Gaussian particle size distribution since they are easier to separate for regeneration, impose a lower pressure drop, provide better a filtration function, have better rinse and

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regeneration efficiency, have a higher ion exchange capacity, faster kinetics, and shorter rinse times. It would have been obvious to have modified the demineralizer of Ito et al so as to have included a uniform particle size anion exchange resin as suggested by Chattapadhyay in order to provide a resin having superior performance characteristics. It is noted that Dowex 550A resin only includes 94.5% of the particles as having a particle size within the range of +/- 50 micron as opposed to 95% or more within +/- 100 micron as claimed, however, further increasing the uniformity of the particle size would have been obvious in order to further increase the performance characteristics of the resin.

Regarding claim 3, Ito et al disclose a method for demineralizing condensate in a nuclear power plant by using the condensate demineralizer of claim 1 or 2 (see lines 34-40 of col. 2).

Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2000-046992 to Hagiwara et al.

With respect to claim 1, Hagiwara et al disclose that a condensate demineralizer for demineralizing condensate including a mixed bed of strongly acidic gel-type cation exchange resin and a strongly porous anion exchange resin having a Gaussian particle size distribution is known in the art (see the section "description of the prior art"). The disclosed prior art fails to specify the limitations of the anion exchange resin as having a uniform particle size with an average particle size of 500-1000 microns and a particle size distribution in which 95% or more of resin particles are within the range of the

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average particle size ± 100 microns. Hagiwara et al teach disclose providing an anion exchange resin having a uniform particle size with an average particle size ranging from 500-700 microns, which overlaps the claimed range of 500-1000 microns, in which 95% of the resin particles are within the range of the average particle size ± 100 microns and teach that the uniform particle size anion exchange resin is more effective for capturing organic contaminants eluted by the cation exchange resin than an anion exchange resin having a Gaussian particle size distribution (see the section "means for solving the problem"). It would have been obvious to have modified the prior art mixed bed so as to have included the anion exchange resin having a uniform particle size as taught by Hagiwara et al in order to facilitate the capture of organic contaminants eluted by the cation exchange resin.

Concerning claim 3, Hagiwara et al disclose demineralizing condensate in a nuclear power plant.

Applicant's arguments, see pages 2-5, filed 3-12-09, with respect to claims 1 and 3 as being anticipated by Ito et al have been fully considered and are persuasive. The anticipatory rejections of claims 1 and 3 have been withdrawn.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew O. Savage whose telephone number is (571) 272-1146. The examiner can normally be reached on Monday-Friday, 7:00am-3:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew O Savage/
Primary Examiner
Art Unit 1797

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